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2 CLAIMS
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4 1. A bit comprising
5 a drill element,
6 a driver element, and
7 a plate member having cutting end,
8 said plate member, driver element, and drill element being
9 assembled together with the plate member being intermediate the
10 driver element and the drill element and said cutting end being
11 adjacent to the drill element.
12

13 2. The bit of Claim 1 where said plate member, driver element, and
14 drill element are three separate components.
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16 3. The bit of Claim 2 where the drill element, driver element, and
17 plate member are axially aligned and fixedly connected together.
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19 4. The bit of Claim 1 where one of said elements has an elongated
20 axial groove therein and the plate member fits snugly therein.
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22 5. The bit of Claim 4 where groove is in the drill element and the
23 plate member has a pointed tip at one end and a cut-a-way section at
24 another end, said drill element being received in the cut-a-way section.
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26 6. The bit of Claim 5 the driver element has a diameter that is
27 greater than a diameter of drill element and there is a cavity in one
28 end of the driver element into which the drill element fits snugly.
29

7. The bit of Claim 5 the drill element has a diameter that is greater

1 than a diameter of driver element and there is a cavity in one end of
2 the drill element into which the driver element fits snugly.

3
4 8. The bit of Claim 1 where both of said elements each have an
5 elongated axial groove therein and the plate member has portions
6 fitting snugly within each groove.

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8 9. The bit of claim 1 where an end of one of the elements has a cavity
9 therein and the other element has an end that fits snugly within said
10 cavity.

11
12 10. A bit comprising
13 a drill element,
14 a driver element, and
15 a plate member having cutting end,
16 said plate member, driver element, and drill element being
17 assembled together with the plate member being intermediate the
18 driver element and the drill element and said cutting end being
19 adjacent to the drill element,
20 said plate member, driver element, and drill element being
21 separate components which are axially aligned and fixedly connected
22 together, and
23 one of said elements has an elongated axial groove therein and
24 the plate member fits snugly therein, and
25 an end of one of the elements has a cavity therein and the other
26 element has an end that fits snugly within said cavity.

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28
29 11. A bit comprising

1 a driver element and drill element that are axially aligned,
2 a plate member intermediate said driver element and drill
3 element, said plate member having a cutting edge for forming a
4 countersink,

5 said driver element including an elongated body having at a first
6 end a driver head and at a second end a cavity,

7 said drill element including an elongated body having a first end
8 portion and a second end portion including a drill segment, said first
9 end portion being inserted into the cavity in the driver element,

10 said plate member, driver element, and drill element being three
11 separate components that are fixedly connected together.

12
13 12. The bit according to Claim 11 where the plate member has a first
14 end received in a groove in one of the elements.

15
16 13. The bit according to Claim 12 where one of the elements has an
17 end with a cavity therein and the other element fits snugly within said
18 cavity.

19
20 14. The bit according to Claim 11 including a pair of annular
21 channels between said first and second ends of the body of the driver
22 element.

23
24 15. A bit comprising

25 a driver element and drill element that are axially aligned,

26 a plate member intermediate said driver element and drill
27 element, said plate member having a cutting edge for forming a
28 countersink,

29 said drill element including an elongated body having at a first

1 end portion a drill tip and at a second end portion a cavity,
2 said driver element including an elongated body having a first
3 end with a driver head and a second end inserted into the cavity in the
4 drill element,
5 said plate member, driver element, and drill element being three
6 separate components that are fixedly connected together.
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8 16. The bit according to Claim 15 where the plate member has a first
9 end received in a groove in one of the elements.
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11 17. The bit according to Claim 16 where one of the elements has an
12 end with a cavity therein and the other element fits snugly within said
13 cavity.
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15 18. The bit according to Claim 15 including a pair of annular
16 channels between said first and second ends of the body of the driver
17 element.
18

19 19. A bit comprising
20 a drill element,
21 a driver element, and
22 a plate member having a tapered cutting edge,
23 said plate member, driver element, and drill element each
24 comprising separate discrete components that each have a locking
25 section enabling said components to be assembled together and
26 interlocked to each other in a fixed position relative to each other, with
27 the driver element and the drill element axially aligned and the plate
28 member positioned between the driver element and the drill element
29 and the cutting edge of the plate member positioned with respect to

1 the drill element to enable said cutting edge, concurrent with the
2 drilling of a hole by the drill element, to cut a countersink at a mouth
3 of the hole being drilled.
4

5 20. The bit according to Claim 19 where the locking component of
6 each separate element has predetermined dimensions that enable said
7 elements to be press fitted together upon assembly forming a frictional
8 bond holding said elements in said fixed position relative to each other.
9

10 21. The bit according to Claim 20 including an auxiliary bonding
11 mechanism in addition to the frictional bond holding said components
12 in said fixed position relative to each other.
13

14 22. A bit comprising
15 a driver element including
16 an elongated body having a longitudinal axis,
17 a driver head at a first end of the driver element
18 body,
19 a cavity at a second end of the driver element body
20 that is axially aligned with the longitudinal axis of the
21 driver element body and open at the second end of the
22 driver element body, and
23 a groove in the second end of the driver element body
24 intersecting the cavity ,
25 a drill element including
26 an elongated body,
27 a first end portion, and
28 a second end portion including a drill segment, and
29 a plate member having

1 a first end, and
2 a second end that is tapered and has a longitudinal
3 slot therein,
4 said driver element, drill element, and slot in the plate member
5 being axially aligned along the longitudinal axis of the driver element
6 body, with the first end portion of the drill element being received in
7 the slot in the plate member and being at least partially inserted into
8 the cavity, and the first end of the plate member being at least partially
9 inserted into the groove.

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11 23. The bit according to Claim 22 where the groove has a
12 predetermined width and the plate member has a predetermined
13 thickness slightly greater than said predetermined width of the groove.

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15 24. The bit according to Claim 22 where the slot has a predetermined
16 width that is slightly less than the diameter of the first end portion of
17 the drill element body.

18
19 25. The bit according to Claim 22 where the slot has at least one edge
20 and the first end portion of the drill element has at least one sunken
21 guideway therein which receives the edge of the slot.

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23 26. The bit according to Claim 22 where the plate member has a
24 pentagonal configuration.

25
26 27. The bit according to Claim 22 where the second tapered end of
27 the plate member merges with the drill element.

28
29 28. The bit according to Claim 22 where the driver element, the drill

1 element, and the plate member are press fitted together.

2
3 29. The bit according to Claim 22 including a pair of annular
4 channels between said first and second ends of the body of the driver
5 element.

6
7 30. A bit comprising

8 a driver element including

9 an elongated body having a longitudinal axis and a
10 predetermined diameter, a driver head at a first end of the
11 driver element body, a cavity at a second end of the driver
12 element body axially aligned with the longitudinal axis of
13 the driver element body and open at the second end of the
14 driver element body and having a predetermined diameter
15 smaller than the diameter of the driver element body, and

16 a groove in the second end of the driver element body
17 intersecting the cavity and having a predetermined width,

18 a drill element including

19 an elongated body,

20 a first end portion with a diameter slightly larger than
21 said diameter of the cavity, and

22 a second end portion including a drill segment, and

23 a plate member having

24 a first end,

25 a second end that is tapered, and

26 a predetermined width slightly larger than the
27 predetermined width of the groove in the driver element
28 body,

29 said driver element and drill element being axially aligned, with

1 the first end portion of the drill element being at least partially
2 inserted into the cavity, and the first end of the plate member being at
3 least partially inserted into the groove.

4
5 31. The bit according to Claim 30 where the plate member has a
6 pentagonal configuration.

7
8 32. The bit according to Claim 30 where the second tapered end of
9 the plate member has an apex merging with the drill element.

10
11 33. The bit according to Claim 30 where the driver element, the drill
12 element, and the plate member are press fitted together.

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14 34. The bit according to Claim 30 including a pair of annular
15 channels between said first and second ends of the body of the driver
16 element.

17
18 35. A bit comprising a drill element at one end, a driver element at
19 another end, and means for providing a countersink concurrent with
20 drilling a hole in an object, said means for providing a countersink
21 being disposed between said drill element and driver element.

22
23 36. A connect-disconnect coupling for a bit having a driver element,
24 a drill element, and a plate member, said coupling including

25 a spindle body having at one end a cavity with an open mouth of
26 predetermined configuration to receive therein the bit, and

27 a slot intersecting the open mouth and sized to receive the plate
28 member when the bit is inserted through the open mouth into the
29 cavity with one of said elements at least partially inserted in the

cavity.

37. The connect-disconnect coupling according to Claim 36 where the cavity has a cross-sectional portion that is substantially the same as a predetermined cross-sectional configuration of the driver element.

38. The connect-disconnect coupling according to Claim 36 where the spindle body has a longitudinal axis and the slot intersects said longitudinal axis.